

16-23
Religious Education
EXHIBIT

Youth

DIGGING UP THE PAST

*Speak to the earth . . .
and it shall teach thee.
Job 12:8*



Youth

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Archaeology is both a humanity and a science. It is manistic because the study of people is its subject and scientific because scientific methods are employed to tease information from the debris of human activity—debris created by people who never knew that their remains would be of interest to others thousands of years later. Had they known, they could have been far more helpful! Since people disturb the earth and leave refuse where they are, archaeology is not only the study of exotic civilizations in

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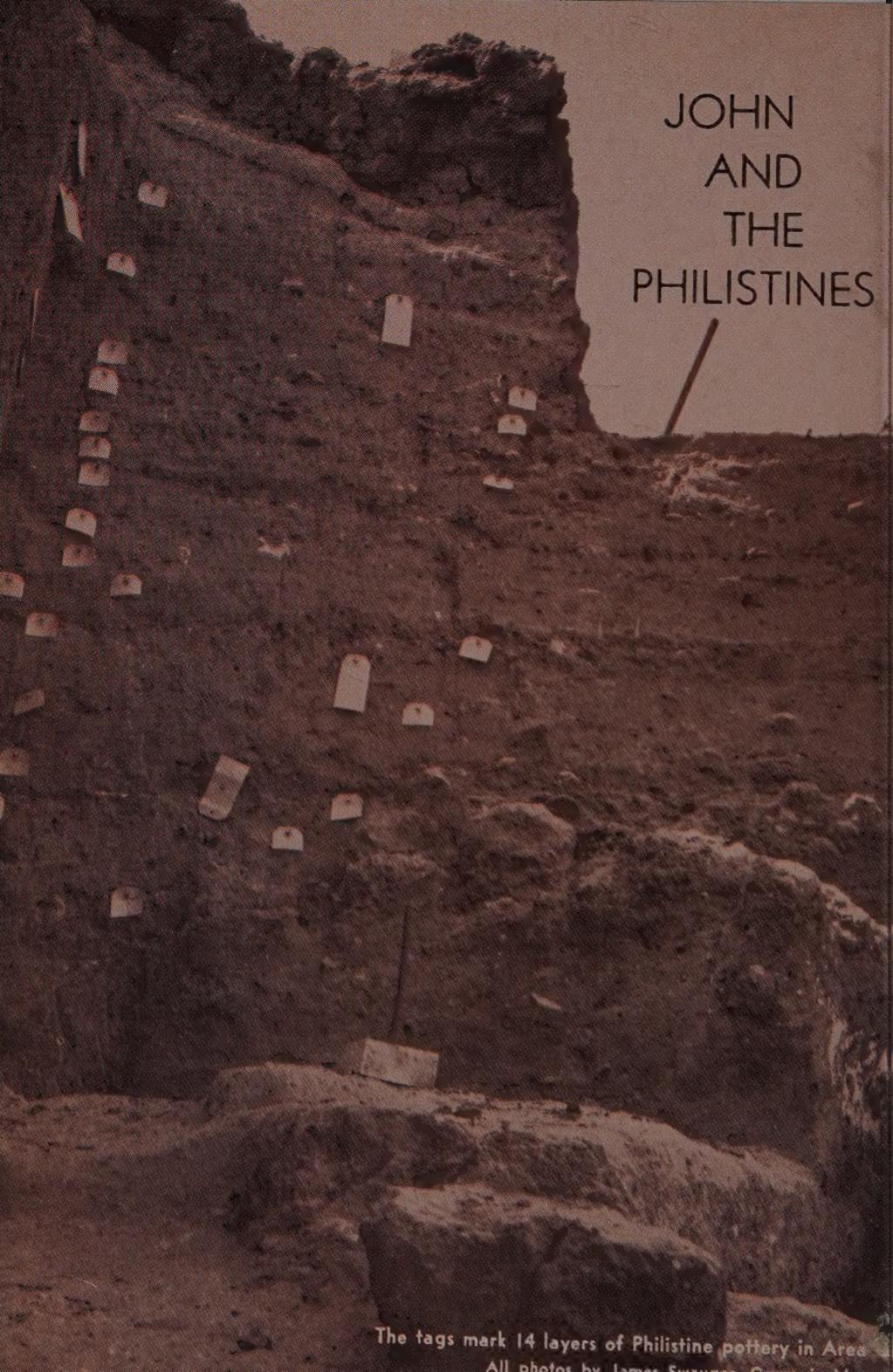
Special assistance was given on this issue by Ragnar Kearton of the University of Pa.'s University Museum.



far-off Holy Lands or the jungles of Central America, but also of where you live. The next time you drive by an automobile junk yard or a town dump, remember that archaeology is being made right there. When you walk through an urban renewal area, notice how the outlines of a demolished older building appear on the new building formerly attached to it. This is also archaeological evidence. If archaeologists of the future were not to have our written records of today, imagine how they would determine how we lived.

Pieces of this riddle of past ages lie on makeshift tables. Some 5600 different fragments have been recovered from a long-flooded cave in Sperlonga, Italy. / Wide World Photo





JOHN AND THE PHILISTINES

The tags mark 14 layers of Philistine pottery in Area

All photos by James S. Sudduth, Courtesy of M



BY JOHN SWAUGER / At six in the morning, with the already hot, blinding sun promising another torrid day, I'd have given anything to sleep a little longer. But I couldn't keep an entire Israeli archaeological excavation waiting just because I wanted sleep, so I somehow made it to breakfast.

At six-thirty, waving good-bye to the hotel in Afridar-Ashkelon where my family and I stayed and still dreaming of my bed so recently and unwillingly vacated, I started to the Ashdod "dig" in the excavation's Jeep, driven by my father, Dr. James L. Swauger, of Carnegie Museum, Pittsburgh, Pa. Usually several other archaeologists, both amateur and professional, went with us.

Our first stop was an ice plant where we picked up ice for the dig's field refrigerator and water cans. We parked in a row of horses and carts, and I had visions of catching a nap. When I did drop off, though, I was shocked awake by a cold object being thrust against my knees. Because I occupied the little seat in the back of the Jeep, I had the dubious honor of riding with the blocks of ice. I had to be awake to keep the sliding ice from bruising my legs!

In five minutes I could see the dig, a long, flat hill which had the name Ashdod long before the Philistines. Three thousand years ago Philistine Ashdod thrived where the hill or "tell" (an Arabic word for the mound which develops when a deserted city is covered with soil) stands today. Within three centuries the Philistines no longer controlled Ashdod, but the city's conquerors, Egyptians, Hebrews, Assyrians, Babylonians, Persians, Greeks, Romans, Crusaders, and Arabs, remembered the greatness of the original metropolis and called their cities Ashdod, or as near as their tongues could come, to the Arabic *Isdud*. When Carnegie Museum, Pittsburgh Theological Seminary, and the Israeli Department of Antiquities sought a Philistine city to excavate, Ashdod was their choice. In 1962 and 1963 excavations were undertaken and I was lucky enough to be there both years.

Unlike most of the other people on the dig, I had no defined nor permanent job. I carried bricks made of the soil of Ashdod that were used in the construction of a

now-deserted Arab village near the tell. I fashioned barriers out of stone and barbed wire so neither people nor animals would fall into test pits we dug. Once I spent an afternoon sifting a dump where the dirt from the excavations was thrown searching for pieces of a 1300-year-old plaque of St. George and the Dragon. But, for the most part, I worked with my father at Area A near the southern edge of the tell during the first season and at Area G on the northern edge, almost directly opposite A, in 1963.

Area G was a successful attempt to discover the northern limits of the tell. In the south the elements and occasional plunderers had bared the walls that had once surrounded the greatest Philistine city. But in the north, the ever-advancing dunes had covered the tell. My father and an Israeli archaeologist hired a "shüfeldozer," or bulldozer, to peel the sand from what they felt certain was the northern extremity of the tell. Soon gray "tell soil" was exposed, proving we had found the northern limits of the 12th century B.C. city. Then we uncovered layer upon layer of pottery with little soil in between. We had discovered the junk yard of Byzantine Ashdod!

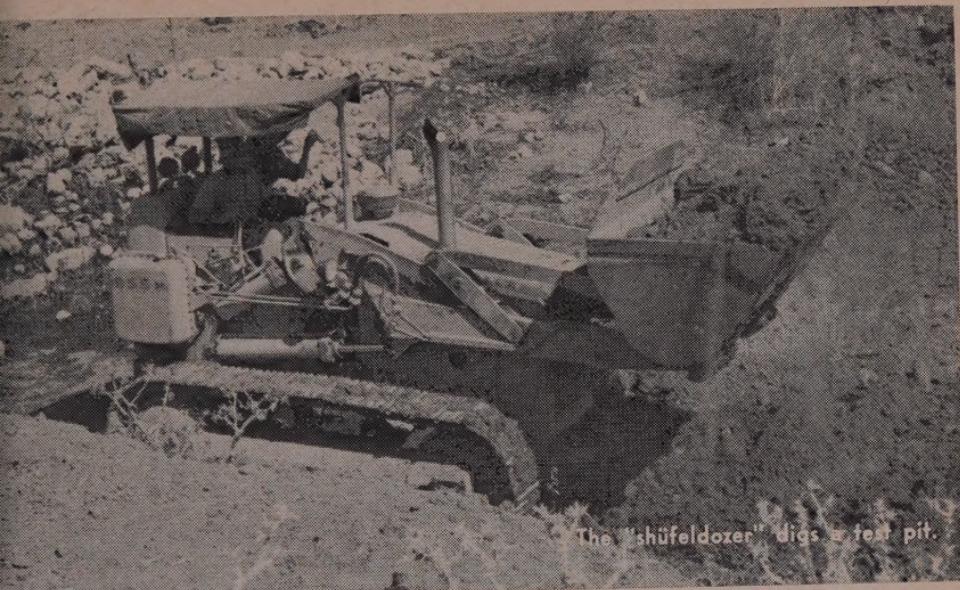
The first thing that became evident, was that before we reached the city wall, we were going to have to clear hundreds of pieces of pottery out of the hole. Most of it was from the Byzantine or Eastern Roman Period which lasted from the fall of Rome to the 15th century. However, we were looking for the Philistine city, so the Byzantine Era was far too recent for us. No one spent much time with the Byzantine pottery we dug; and although my father and I saved some of it, most of it landed in our dump.

More exciting things developed. For one thing, we found 14 layers of Philistine pottery which might well yield the first Philistine pottery chronology. Then Dr. Moshe Dothan, Deputy Director of the Israeli Department of Antiquities and Chief Archaeologist at Ashdod, discovered part of a "stele," or inscribed pillar, of the Assyrian king Sargon II, who conquered Ashdod in the eighth century B.C. This fragment, together with one discovered at Area A, is the first Sargon II stele found in Israel. Our expedition director, Dr. David N. Freedman, was overjoyed with this great find.

We began discovering walls, so many in fact that we had to tear some down to understand and map those behind them. On Friday mornings, my father went to the bank, leaving me in charge. For fear of reprimand, I had the work crew stop every time a pick hit what could, with any stretch of imagination, have been a floor. Without fail it was. We found so many floors that by the season's end, we had only an area a yard square that wasn't floor in a trench nine by 35 feet.

When we reached Area G this morning, the workmen were already there. I swept floors and walls with a whisk broom to keep the area as clean of sand as possible and carried the sand in rubber buckets to our dump. I put my "patish," a kind of hand pick, to good use straightening the trench's walls, scraping them so every line of soil change could be seen clearly, and loosening pottery from the walls.

The hours seemed to lengthen as the sun got higher and hotter. I



The "shufeldozer" digs a test pit.

author works out
a G with a patish.



sure my father was aware that much more work got done where there was shade than where the sun poured in. A sea breeze came up during the afternoon and was somewhat cooler than the air we had been working in, but it also picked up sand and dashed it against the trench, "sand-blasting" us. It was hard to tell whether the wind was for us or against us.

Days at the site ran smoothly, broken only by the arrival of the two-gallon water containers for the dig areas, the announcement of lunch at nine- and three-o'clock "tea," or the discovery of an important structure piece of pottery. Sometimes boys would come to pick fruit from the prickly pear cacti that grew all around. Occasionally someone would sight a large rabbit or speckled snake, or a worker would pick a sand-colored tail-lashing scorpion up on his hoe.

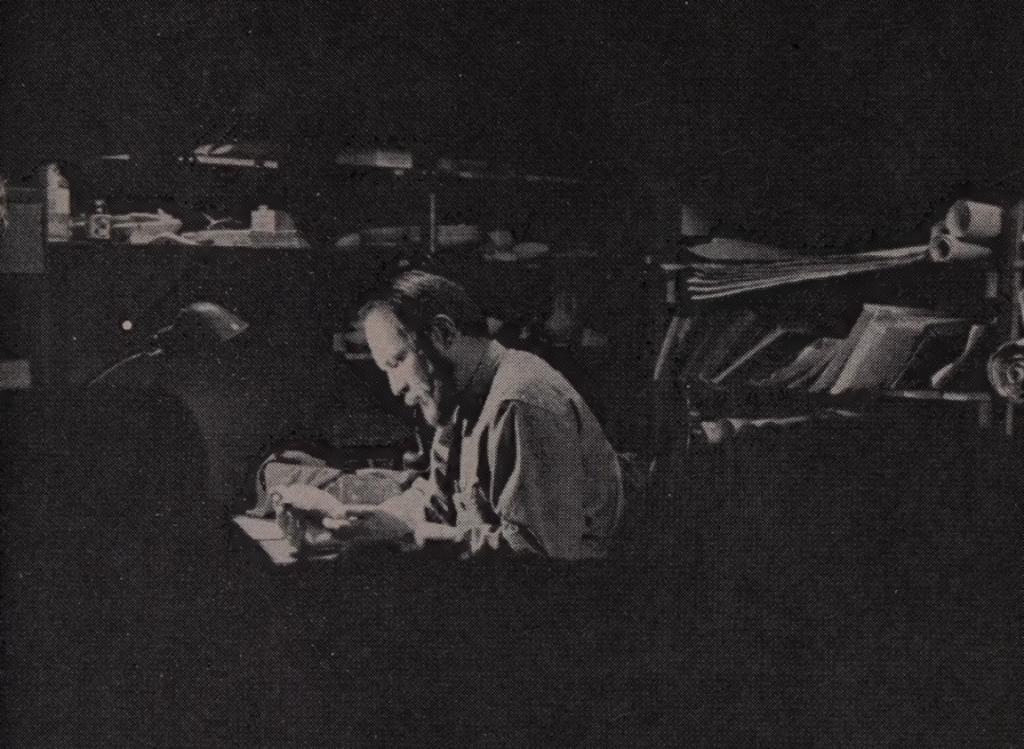
At 12 excavation stopped and everyone had lunch. Those of us who stayed at the hotel usually had sandwiches and cucumbers and tomatoes. Most of the excavation staff stayed at a youth village and had the only hot meal of the day at lunch. I never understood how, after working five or six hours in the sun, anyone could stand a lunch consisting of soup, hot meat, great lumps of potatoes or boiled cabbage, and steaming tea.

We had half an hour for lunch, but I usually finished before the allotted time was up. I spent a few minutes browsing around the headquarters building, where pottery was identified, blue-prints drawn, photographs developed, and broken pots glued together. Sometimes I inspected the pottery dump, where pieces of pottery the archaeologists deemed worthless were thrown, searching for pieces to augment my young sister's pottery collection.

I knew it was time to go back to work when I saw the horse and cart begin to carry dirt to Area A's dump and heard dozens of Hebrew voices call from square to square. Afternoons at Area G were much the same as the mornings except the sun was hotter, the dust thicker, and everybody slower. At four the workers left for their homes in Moshav Uzziah, a communal farm nearby, in the old city of Ashkelon, eight miles away, or the new industrial Ashdod being built two miles to the north of the tell. My father and I stayed until five or later with the technical staff, checking and adding to records, labeling pottery buckets, and organizing the next day's work. Then we left for the hotel, tired and very dirty.

I found working at Ashdod boring and exasperating as well as interesting and amusing. The work never seemed to move fast enough, and my work never seemed important. Valuable finds were few and far between. But the learning, the fun I had with the workers, and the excitement of just being there all contributed to my enjoyment of the dig. I'm sure that I would not hesitate to return to Ashdod if offered the opportunity. ▼

JOHN L. SWAUGER / In 1962 and 1963 John was privileged to accompany his father Dr. James Swauger of the Carnegie Museum in Pittsburgh, Pa., to the Middle East on an archaeological expedition. John is currently a high school student in Pittsburgh.



On Becoming an Archaeologist . . .

The education of an archaeologist is long and difficult; a task not to be lightly undertaken. It usually requires years of formal study with a final goal of knowledge about people as seen in their material remains. Professional positions are few, and the financial rewards are anything but extravagant.

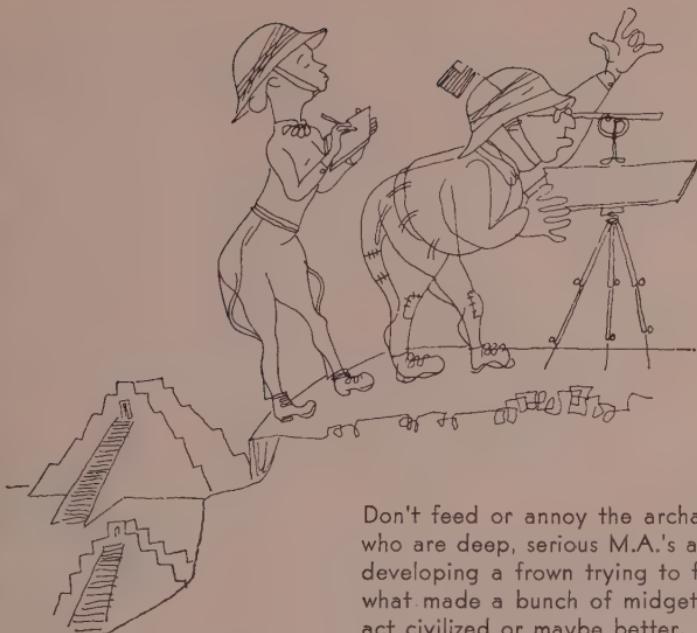
Every archaeologist is a jack-of-all-trades and the very best are masters of many. High school students often ask: "What can I study in preparation for college and graduate work when archaeology is not taught in high school?" The answer is almost everything: biology, geography, history, art, general science, and the all important languages, especially French and German. Mechanical drafting, elementary mathematics, and photography are also essential. Visits to the museums, and the historical and archaeological sites near you would be very instructive, if you have the slightest interest in archaeology. All states maintain some kind of a State Museum with displays and records of that state's pre-European settlers. Many seminaries operate libraries where one can study early Judeo-Christian history. Be curious. Ask questions. But remember, when you visit some of the fine archaeological museums near you, you see only material artifacts—not the people who made them. These artifacts are those remains which are relatively impervious to time. From such remains we can only hope to infer what a particular people thought important, what they believed, and how they behaved, for archaeologists are the historians of people who left little or no written history.

—REGNAR KEARTON

*... from an
archaeologist's
sketchbook*

Alfred Bendiner, architect and artist, lived and worked in Philadelphia until his death in March of 1964. As an architect, he accompanied the University of Pennsylvania's archaeological expedition to Tikal in Guatemala. As an artist, he compiled "An Archaeologist's Sketchbook" of drawings and comments on the expedition. In his own words, "They didn't specify that we work solid from six AM to nine PM like regular archaeologists, ethnologists, anthropologists, grave diggers, and sherd polishers. So I found some time to doodle."





Don't feed or annoy the archaeologists, who are deep, serious M.A.'s and Ph.D.'s developing a frown trying to figure out what made a bunch of midget Indians act civilized or maybe better. It's all still a wide open problem lacking a wordy solution and if you can learn the Morse code you can date a monument as quickly as the "beards." So come, oh come, to Tikal.



Land Rover-Tican

Ernesto Bautista 21

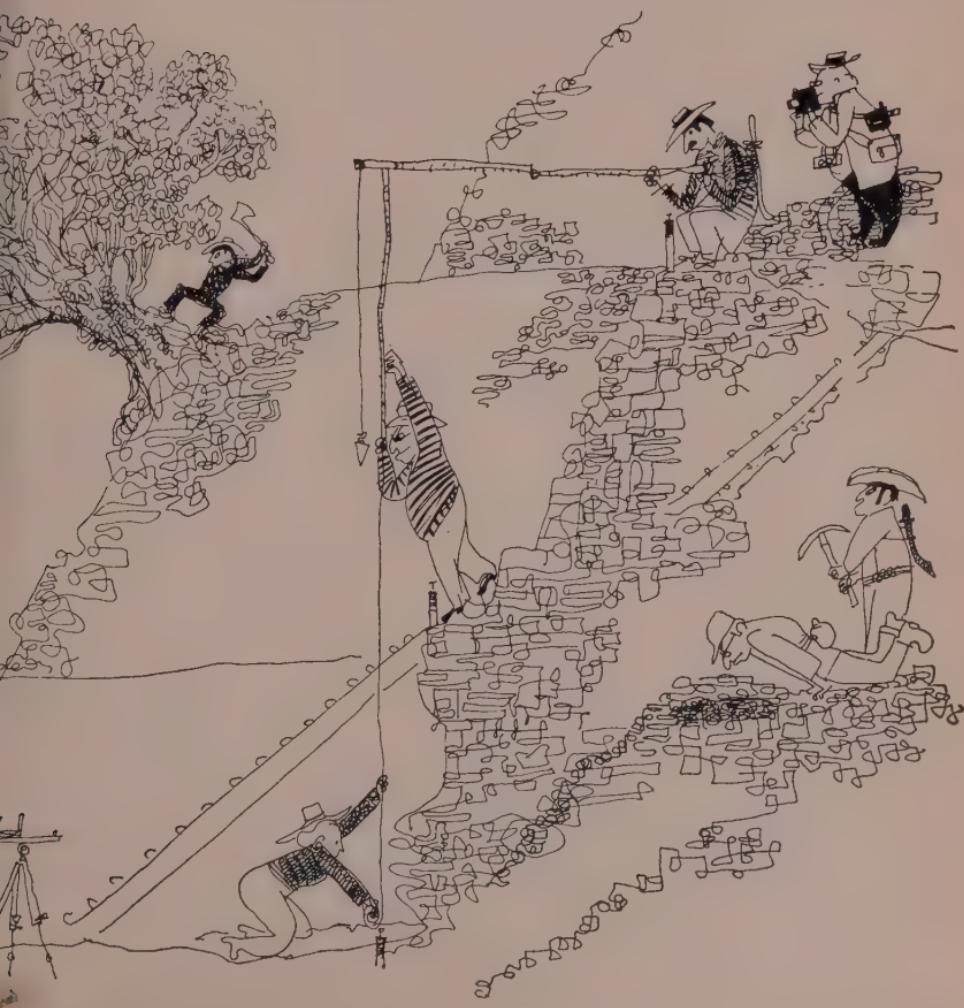


These are the surveyors going out to work
in the jungle, each with four husky
chicleros to carry the gear and do the work.

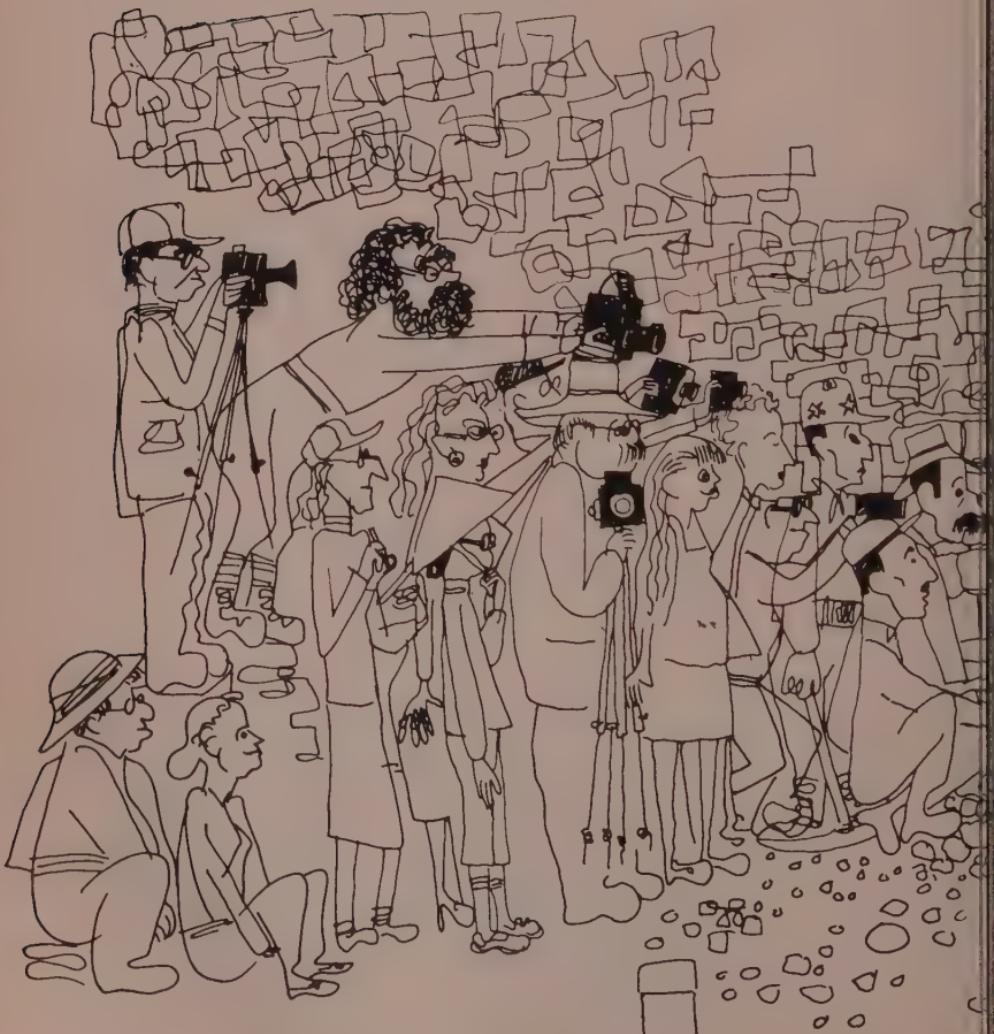


Home Sweet Home

For any other middle-aged hopeful who thinks archaeology is just a-settin'
with a cool drink and yelling at a workman to dig or measure, this is an
accurate delineation of what to do until the doctor (of philosophy) comes.



It used to be tradition that when you uncovered a tomb of some ancient, the gods would drop you dead in your tracks or curse you so hard that your arm would wither or something equally awful and serious would happen. But, nowadays, you couldn't possibly collapse in a heap without falling over six tourists, a visiting scientist and his wife, two photographers from "Life" and all the members of your staff who are waiting for the "big moment." This is a true picture of the discovery of Stela X.





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Dom Pedro, the Indian pick man, has just hit nothing . . . and opened a big hole doing it, which turned out to be a richly stocked tomb of an important personage—the highlight of the season!

BY ROBERT DYSON / By land, sea and air, modern archaeology is engaged in a massive assault upon the record of man's past. From the upper Nile valley to the jungles of Guatemala to the Missouri River Basin, a small army of technicians using the latest techniques of science is working shoulder to shoulder with archaeologists to recover the elusive evidence of man's former activities. Soil samples are taken for chemical and pollen analysis for clues to shifts in rainfall, temperature and vegetation; charcoal bits are sealed in dust proof plastic bags and shipped to nuclear laboratories for radiation tests involving carbon 14. Laboratories are crowded with other samples from excavated sites awaiting analysis—glass, silver, bronze, iron, glazed pottery, antimony and even gold. The research effort being made is international in scope and interdisciplinary in nature. Why all the activity and interest?

The question involves almost as wide a range of answers as there are technicians. Archaeology in the 20th century has become big business. Every year the number of people travelling over the earth's surface increases. These tourists demand attractions wherever they go, resulting in a renewed interest on the part of individual countries in the salvaging and restoration of local monuments and antiquities. Thus, Mexico recently installed a magnificent new museum for its archaeological treasures and at the same time spent over a million dollars on a crash program to clear and restore the ancient site of Tiahunaco. The University Museum of Philadelphia, in a project stretching over ten years, has spent another million dollars restoring the great Maya temples of Tikal on behalf of the Guatemalan government. Since Tikal lies deep in the jungle, this job required the building of an airstrip, administrative center, model village, sawmill, quarry, lime-kiln, tourist hotel and roads. Tikal has now become a major center not only for tourists visiting Guatemala, but for research into all aspects of the Maya and their environment.

Modern archaeology is big business in another way which is both dirty and dramatic. Throughout the

ARCHAEOLOGY: A SCIENTIFIC



TIER

world, professional excavators are in a never ending battle to prevent commercially interested parties from plundering sites and thereby causing the irretrievable loss of essential information about the objects found. The sale of antiquities is a multi-million dollar business in the art markets of the world, and some of those concerned engage in a most insidious harassment of legal, professional excavations to prevent them from being carried out.

Even more important, with the re-emergence of nationalism the materials of archaeology have become an important political weapon. Do we want to establish our national identity apart from our neighbors? Do we want to show our people that they have once been great and should, therefore, work harder? Do we want to prove that the present ideological system is a natural outgrowth of history? Why then, what could be more natural than to put archaeologists to work on digging up the past and presenting their results in these terms? And nationalistic governments do just that.

For all these purposes, most national governments have established Departments of Antiquities. These departments attempt to control the flow of antiquities out of the country, and to regulate the conditions under which excavations may be done. They employ archaeological inspectors to see that such regulations are carried out and provide national and local museums to house the objects found.

Most foreign archaeologists working in these countries have been trained in anthropology, Oriental studies, architecture, or fine arts and bring with them the special interests of these fields. In addition, however, to these traditional interests in archaeology, a number of other areas of specialization have recently been brought into play. In Iraq and Pakistan the governments are greatly concerned with increasing food production through the rehabilitation of irrigation systems. How will these efforts work and what effects may be anticipated in these projects? Soil engineers, chemists, hydrographers, epigraphists and archaeologists have all combined their efforts to learn the answer to these questions. A recent survey by the Oriental Institute of Chicago showed that the decline of wheat and the increase of barley production 4000 years ago in Iraq was due in part to salt formation in the fields caused by over-irrigation without proper drainage—a danger that needs to be avoided even to this day. Elsewhere land surfaces are being studied for the evidence of ancient settlement patterns and irrigation systems in connection with the rise of urban living. Pathologists are busy checking the bones of the inhabitants of these ancient urban centers for



traces of disease, nutritional effects, blood types, and historical origin. Such studies provide a depth in time for certain genetic theories of importance to living man.

Parallel to the research by aerial photography carried out in conjunction with the current mapping of large sections of the earth's surface and large and small scale excavations on that surface, is the growing exploration of the ocean depths. Below the sea lie hundreds of sunken ships as well as numerous submerged harbors. Diving equipment, perfected since World War II, now makes work at moderate depths possible for limited lengths of time. From the depths is emerging a new knowledge of ship building and international trade in ancient times.

From all of these activities, whether above or below water, a multitude of artifacts are recovered which are of increasing interest to industry from the point of view of the history of technology and methods of manufacture. What was the method of manufacture of ancient beautifully colored glass—and how can this information be applied to our own glass making to give new products? What were the characteristics of the various metal alloys used in early times and how were they used?

Above and beyond these simpler questions which involve the techniques of chemistry and physics as applied to more traditional materials there also looms the world of nuclear physics in archaeology. In this area lie various dating techniques which use the decay of unstable isotopes as the means of measuring time, as well as the use of nuclear bombardment to identify trace elements in trade items, thereby making it possible to study the origins of manufactured goods in current times.

All of these extensive and expensive techniques involve much time and effort. They challenge the intellect and the imagination of the archaeologist using them. Yet it has been truly said that "archaeology never baked a loaf of bread." On the other hand, archaeology has had, and is having, an enormous impact on our modern world—it is changing our world of ideas through its ability to define the rate at which various kinds of cultural change takes place, through the elucidation of the factors involved historically in the interaction between man and the landscape in which he lives, through the recovery of lost knowledge concerning the behavior of materials in the process of manufacturing. Finally, and most important, through the recovery of ancient literary texts and objects of great beauty, archaeology enlarges our world of visual enjoyment and stimulates our world of imagination and dreams.

ROBERT M. DYSON, JR. Professor Dyson is Associate Curator of the Near Eastern Section of the University Museum and Assistant Chairman of the Department of Anthropology of the University of Pennsylvania. He is Field Director of the University's Iran expedition whose excavations include the famed Hasanlu.



Divers off the southern coast of Turkey use an airlift device for raising objects to the surface, as part of their work in a University Museum expedition. / University Museum Photo



HOW TO DATE A DIG

"How old is it?" is a major question archaeologists have to face. Where finds of tablets or other records are made, dating can be done from the references in writing, since scholars have compiled ancient dating systems with our own today. An archaeologist can also examine an object from the perspective of other objects with which it was found—it is likely to be of the same date as other items in that layer. Or, one can examine the object itself, comparing it with others of its kind. Pottery has been classified to some extent that it may be generally identified in this way. For prehistory, classification is sometimes made through geological evidence, since geologists have developed a chronology of the advance and retreat of the ice cap during the glacial period. And today dating is being aided by science, for example, by the field of Carbon 14 dating. All living organisms contain radioactive carbon and the rate at which their radioactivity is lost has been established. The remaining radioactivity can be measured, and thus, its age calculated. Science is continuing to develop new methods. In November, scientists announced a method called thermoluminescence—a technique for measuring energy which the pottery has accumulated since the time it was originally fired. The photographs show three scientific methods of dating in use at the University of Pennsylvania: the tree ring method (for dating wood objects), the Carbon 14 lab, and the thermoluminescent method for dating pottery.

Photos by Ed Eckstein

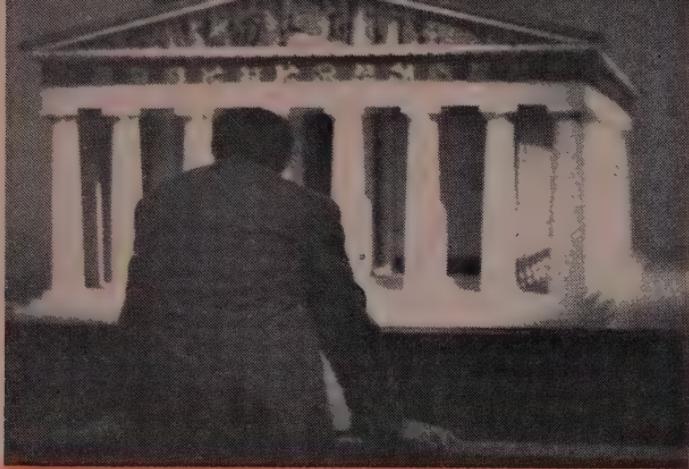


Photo by Charles Newton

WHERE'S A GOOD MUSEUM?

ARCHAEOLOGY MUSEUMS

American Museum of Marine Archaeology, Jupiter, Fla.

Buckeye Historical and Archaeological Museum, Buckeye, Ariz.

Harvard University, Semitic Museum, Cambridge, Mass.

Phillips Academy, Robert S. Peabody Foundation for Archaeology, Andover, Mass.

Southern Methodist University, the A. V. Lane Museum of Archaeology, Dallas, Texas

Stanford University Museum, Stanford, Calif.

University of Chicago, Oriental Institute Museum, Chicago, Ill.

University of Kansas, Wilcox Museum, Lawrence, Kan.

University of Michigan, Kelsey Museum of Archaeology, Ann Arbor, Mich.

University of Missouri, Lyman Center for Archaeological Research, Miami, Mo.

University of Pennsylvania, University Museum, Philadelphia, Pa.

ANTHROPOLOGY / INDIAN MUSEUMS

Bernice P. Bishop Museum, Honolulu, Hawaii

California State Indian Museum, Sacramento, Calif.

Canyon de Chelly National Monument, Chilo, Ariz.

Harvard University, Peabody Museum, Cambridge, Mass.

Indiana University Museum, Bloomington, Ind.

Museum of the American Indian, Heye Foundation, N.Y., N.Y.

Museum of the Cherokee Indian, Cherokee, N.C.

Museum of New Mexico, Hall of Ethnology of the Laboratory of Anthropology, Santa Fe, N.M.

Museum of Northern Arizona, Flagstaff, Ariz.

Rochester Museum of Arts and Sciences, Rochester, N.Y.

Sacramento Valley Museum Association, Sacramento, Calif.

San Diego Museum of Man, San Diego, Calif.

University of California, Robert H. Lowie Museum of Anthropology, Berkeley, Calif.

University of Kentucky, Museum of Anthropology, Lexington, Ky.

University of Michigan Exhibits Museum, Ann Arbor, Mich.

University of Michigan Museum of Anthropology, Ann Arbor, Mich.

University of Missouri, Museum of Anthropology, Columbia, Mo.

University of New Mexico, Museum of Anthropology, Albuquerque, N. M.

University of Pennsylvania Museum, Philadelphia, Pa.

University of Utah, Anthropology Museum, Salt Lake City, Utah

Wayne State University Museum of Anthropology, Detroit, Mich.

SITES TO SEE

Casa Grande National Monument, Coolidge, Ariz.

Chaco Canyon National Monument, Bloomfield, N. M.

Grand Canyon National Park, Tusayan Museum, Grand Canyon, Ariz.

Mesa Verde National Park, Mesa Verde National Park, Colo.



BOOKS TO READ

Childe, V. G. *Man Makes Himself.*

Mentor PB / 60c

Clark, G. *Archaeology and Society.*

Barnes & Noble PB / \$1.95

— *World Prehistory: An Outline.* Cambridge University Press PB / \$2.45

Clark, G. and Piggott, S. *Prehistoric Societies.* Knopf / \$5.95

Driver, H. E. *The Americas on the Eve of Discovery.* Spectrum PB / \$1.95

Harrison, R. K. *Archaeology of the New Testament.* Association Press / \$3.95

Hole, F. and Heizer, R. *An Introduction to Prehistoric Archaeology.* Holt, Rinehart and Winston / \$7.00

Kenyon, K. M. *Beginning in Archaeology.* Praeger PB / \$2.45

Macgowan, K. and Hester, J. A. *Early Man in the New World.* Natural History Library PB / \$1.45

Oakley, K. P. *Man the Tool-Maker.* Phoenix PB / \$1.25

Piggott, S. *Approach to Archaeology.* McGraw-Hill PB / \$1.95

Wheeler, M. *Archaeology from the Earth.* Penguin PB / \$1.25

Westminster Historical Atlas to the Bible (revised edition). G. E. Wright and F. V. Filson, editors. Westminster Press / \$7.50

WHERE TO STUDY

The following universities have major departments of archaeology.

University of Arizona, Tucson, Ariz.

University of California, Berkeley, Calif.

University of California, Los Angeles, Calif.

University of Chicago, Chicago, Ill.

Harvard University, Cambridge, Mass.

University of Pennsylvania, Philadelphia, Pa.

University of Texas, Austin, Texas

University of Wisconsin, Madison, Wisc.

Yale University, New Haven, Conn.

This tablet contains part of one of the most "human" documents ever excavated in the Near East. It is an essay dealing with the day-to-day activities of a Sumerian schoolboy. The schoolboy writes that he is terribly afraid of coming late to school "lest his teacher cane him." When he awakes he hurries his mother to prepare his lunch. In school he misbehaves and is caned more than once by the teacher and his assistants.

"What did you do in school?"
"... I recited my tablet, ate my lunch, prepared my new tablet, wrote it, finished Then they assigned me my oral work, and in the afternoon they assigned me my written work. When school was dismissed, I went home, entered the house and found my father sitting there. I told my father of my written work, recited my tablet to him, and my father was delighted. . . ."



The red rock of Gobekli Tepe in southern Anatolia, Turkey.

DIGGING INTO THE BIBLE . . .

LIONEL A. WHISTON, JR. / Archaeology is a highly personal thing. Once you've been on a dig, you'll never forget the thrill of kneeling in the hot earth, carefully brushing aside the dirt to expose a large piece of pottery, hoping against hope that it will join together with other pieces you've found, and will find. And there is no substitute to being able to say, "I am standing where the Apostle Paul stood; here the soldiers of David fought; these are King Solomon's mines." But there is more to archaeology than the personal adventure.

A century of scientific excavation has produced a science which is vastly enlarging and transforming our picture of man's past and is serving as yet another aid by which we understand today who and what man is. By digging into the past, we better understand who we are today. And Christians are quick to ask: How does this mushrooming science of archaeology affect our understanding and reading of the Bible?

Getting the feel of history in Bible times. Our is a world of rapid change and we who are young live restlessly in the present, impatient with the past. We cannot comprehend with any sympathy even the times when our parents were young, to say nothing of seeking to get back to the times of the Bible. But the archaeologist stands with his feet planted solidly in history. He gets to the past not by a jump of the imagination, but by the sweat of his brow. For him, the past lives, and one fruit of his work is that those of us who are able to feel his feelings can also enter this world of the past.

It is a distant past, for now it is nearly 2000 years to the days of Jesus. But Jesus is only half the distance in time to Abraham, and from now to Abraham is only half way to Jericho. Human beings who practised their religion lived in caves on Mount Carmel over 100,000 years ago.

The book of Genesis in large part centers around Abraham, Isaac and Jacob, who are often known as the patriarchs (a Greek word meaning "forefathers"). Scholars used to regard these accounts as being from a much later date and little confidence was felt in their accuracy. Archaeology by no means proves that these stories are literally true, but it proves beyond a shadow of a doubt that the stories were transmitted faithfully by word of mouth from generation to generation.

For example, the migration conditions under which Abraham lived were only possible in the period about 1900 B.C. Abraham and his descendants belonged to an ethnic group known as the Amorites. Excavations in the ancient city of Mari on the banks of the Euphrates have produced clay tablets in which the names of the patriarchs appear. This does not mean that Abraham is mentioned at Mari; it does mean that Abraham is of the same stock and language group as the Mari people.

Further to the east is Nuzi. Excavations there unearthed, in a stratum contemporary with Abraham, the entire legal records of the community. These clay tablets make it very clear that the customs of the patriarchs fit the legal procedures of Nuzi. We have specific names and cases of men who obtained a second wife or concubine because their wife had not given birth to an heir (Gen. 16). The method of oath taking (Gen. 24: 2) or the legality of a trusted servant serving as an heir (Gen. 15: 3) corresponds to Nuzi practice. In Nuzi to possess the household gods was to have the legal right to inheritance. This explains the agitation of Laban when Rachel had taken the family gods (Gen. 25: 30). Our picture of the patriarchs is still shadowy, but archaeology has given us a much firmer base.

The same thing has taken place in respect to the reign of King Solomon. We are told that he built many large buildings and that he mined and shipped copper (I Kings 9). A characteristic of every major Israelite city is a majestic gate elaborately shaped and buttressed with great stones. Many of these can be specifically dated in Solomon's regime.

Explorations down the valley leading from the Dead Sea to the Gulf of Akiba have brought to light many mining camps contemporary with Solomon. On the Gulf of Akiba itself Solomon's smelting facilities and seaport were uncovered where they had been concealed by the blowing sand. Here the wind blows continually, rushing down the valley from the Dead Sea and providing ideal conditions for smelting with a forced draft, a principle that was not employed in Pittsburgh until late in the 19th century.

In this manner we could go through the pages of the Bible showing how archaeology has provided us with chronological verification of events, has revealed the ways of life and customs of the time and has given us examples of weights, measures, coins and other data. Consequently we read the Bible with far greater clarity, accuracy and interest than we were able to do as recently as 30 years ago.

Sensing the texture of the Christian faith / There is an accidental quality about the contents of the Bible. Its authors and collectors were not thinking of devout Christians who would read these words as their holy scriptures thousands of years later. Rather these men of old were seeking to express their own faith for their own day, and most of what they wrote was designed for use in their worship. Thus there is much in the Bible which seems of great importance and yet its precise meaning eludes us. Here archaeology has been of great value. To illustrate this, let us look at three representative examples: ancient treaties, the Dead Sea Scrolls, and the temple library at ancient Ugarit.

Ancient treaties and the Covenant: We now have literally tens of thousands of inscribed clay tablets from the ancient Near East. These portr

Amateur archaeologist Ruth Pechersky and veteran archaeologist Pessah Adon display the bronze, copper and ivory objects which the girl discovered in a cave during a Hebrew University expedition to the Judean desert. / U.P.



an entire culture in all its aspects, including the area of diplomacy. About a decade ago George Mendenhall made a comparison of Hittite treaties and the Old Testament covenant. Old Testament scholarship has never been the same since. We now know that most ancient treaties have a similar structure to what the Bible calls a "covenant."

The treaty opens with an identification of the ruling sovereign (Compare the biblical, "I am the Lord thy God . . .," Ex. 20: 2). The treaty continues with an account of the exploits of the sovereign (Compare the biblical, "who brought you out of the land of Egypt, out of the house of bondage," Ex. 20:2). Next come the conditions or the stipulations required by the treaty (Compare the Ten Commandments. Ex. 20: 3-17). Provision is then made for official deposit for safe keeping and a public reading (See Joshua 24: 26). Then comes a list of treaty witnesses (See Joshua 24: 26-28). The treaty concludes with a list of blessings if the treaty is fulfilled (See Deut. 28: 1-14 or Matt. 5: 3-13; Luke 6: 20-23) and of curses if it is broken (See Deut. 28: 15-68 or Luke 6: 24-26). The structure of the book of Deuteronomy from beginning to end is that of a covenant treaty and all the sermons of the prophets find their natural home within the situation of preaching the covenant.

As you have already realized, this is a highly technical subject. However, if you should learn these six characteristics of treaties and covenants and keep them clearly in mind when you read the Bible or hear it read, you will soon see that you are reading and hearing differently than you once did. Such a difference is a direct contribution of archaeology.

The Dead Sea Scrolls: No archaeological discovery has ever received the publicity given to the Dead Sea Scrolls. Here are parts of hundreds of Old Testament manuscripts a thousand years older than anything we have ever had before. For the first time a discovery has had a definite effect on how we read the Old Testament text. It may well be that within a few years, when the full manuscripts are published, that for the first time we will be able to read the books of Samuel in very close to their original form. Our English versions hide the fact that the Hebrew text of these books is very imperfect. We know that at the time of Jesus the book of Psalms arranged the psalms in a different order than they now are in our Bible, and that some extra ones were included. There was no single authoritative text of the Old Testament. Rather it was handed down in at least three different forms. None of this is of any particular interest to the average reader, but it does indicate the importance of these archaeological discoveries and it suggests that future translations of the Bible will be somewhat different from the ones we now know.

Actually these finds are more important for New Testament studies than for Old. Among the manuscripts are documents which describe the govern-

ent and way of life of this Essene community which lived an isolated life near the shore of the Dead Sea. These manuscripts along with the remains of their buildings suggest some striking parallels with the New Testament. These people were also awaiting the coming of a Messiah. They had a governing board of 12 reminding us of the 12 tribes of Israel or the 12 apostles. In addition to these 12, they had three executive officials not unlike the role played by Peter, James and John in the book of Acts. Like the early church they felt so closely the bond of their common life that they had community ownership of all property. They observed a ceremonial meal remarkably like the Christian "Lord's Supper."

The parallels with the New Testament are real and important. The differences are perhaps even more important, but that is another story. What these discoveries have done is to open up for us a vivid picture of the Jewish world at the time of Jesus into which the church was born. Much that was obscure or baffling has now become much clearer as a result.

The gods of Ugarit: At ancient Ugarit (the modern Syrian town of Ras Shamra) has been found the temple library, including a large number of mythical and liturgical texts. These are written in the language of ancient Canaan and contain myths of the Canaanite gods and epics of their religious heroes. Their chief god was Baal, meaning "lord" or "master." He was a god of life and fertility, but every year he died. With his death the dry season came and crops languished until he came to life again. This kind of god gives new understanding to the epithet Israel gave to its God, Yahweh, "the living God." The story of Elijah and the prophets of Baal (I Kings 18) shows how God, not Baal, brings the life-giving rain. We also read how God through Elijah raised the Syrian widow's son from death in Baal's land (I Kings 17). The list of parallels between the Ugarit tablets and the Old Testament is astonishing, to say nothing of how the closely-related vocabulary of Ugarit has helped us translate more accurately any number of difficult Old Testament passages.

This then is what biblical archaeology does for us today. Above all, archaeology does not prove the truth of the Bible. Neither does it disprove it. Its purpose is to investigate and to interpret its investigations. Occasionally archaeological findings will suggest some errors of the fact in the biblical record. For example, in Daniel 4 we should probably substitute the name of Abonidus for that of Nebuchednezzar. More often, archaeology tends to confirm the remarkable accuracy of the biblical record.

Basically, however, archaeology is a scientific discipline which should not be used by itself, but should be used in teamwork with the totality of resources of modern scholarship. When it is so used, the Bible begins to emerge in clear and compelling terms as God's Word. By digging into the past, we can grow in our understanding of the faith for today.

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Out of the dark past
symbols on an ancient boundary marker
remind us that we are not alone
and that time has no boundaries.

The very earth we walk on
buries the debris of those who fathered us.
We dig into the past and find—

The commonness of daily survival for all men . . .
The search for truth that threads through the ages . . .
The expression of a beauty that never fades . . .
The awe of worlds yet unknown . . .

And we wonder what our children's children
in their new world of tomorrow
will find when they prod among our ruins—

In the dust, the shards of shattered tubes . . .
In the streets, the tell-tale bones of a hopeless flight . . .
On the altars, embroidered tapestry and tarnished gold . . .
In a cave, the forgotten scrolls of holy writ . . .

And in the night, the light of a lonely star.